

AMENDMENTS TO THE CLAIMS

1. (Cancelled)
2. (Currently amended) ~~The composition for forming an anti-reflective coating on a semiconductor substrate~~ method for manufacturing a semiconductor device according to claim ~~[[1]] 15~~, wherein ~~said- the~~ polymer contains at least one of polyimides, acrylic polymers, polymers having an alicyclic structure and fluorocarbon resins formed by homo-polymerizing or co-polymerizing fluorine-containing monomers.
3. (Original) ~~The composition for forming an anti-reflective coating on a semiconductor substrate~~ method for manufacturing a semiconductor device according to claim 2, wherein the fluorine-containing monomers comprise at least one of fluoroolefines, fluorovinylether, vinylidene fluoride, vinyl fluoride, chlorofluoroolefines, and fluorovinylether having carboxylic groups or sulfonic groups.
4. (Original) ~~The composition for forming an anti-reflective coating on a semiconductor substrate~~ method for manufacturing a semiconductor device according to claim ~~[[1]] 15~~, wherein said polymer contains 10% by weight or more fluorine atoms.
5. (Cancelled)
6. (Cancelled)
7. (Currently amended) ~~The composition for forming an anti-reflective coating on a semiconductor substrate~~ method for manufacturing a semiconductor device according to claim ~~[[1]] 15~~, wherein said polymer has a cross-linked structure.
8. (Cancelled)

9. (Cancelled)

10. (Cancelled)

11. (Currently amended) ~~The composition for forming an anti-reflective coating on a semiconductor substrate~~ method for manufacturing a semiconductor device according to claim [[1]] 15, wherein said solvent comprises at least one of alcohols, aromatic hydrocarbons, ketones, esters, chlorofluorocarbons, and super pure water.

12. (Cancelled)

13. (Cancelled)

14. (Cancelled)

15. (Original) A method for manufacturing a semiconductor device, comprising:
an anti-reflective coating forming step for forming an anti-reflective coating by coating the composition for an anti-reflective coating according to claim 1 on a semiconductor substrate;
a resist film forming step for forming a resist film containing fluorine on the anti-reflective coating formed in said anti-reflective coating forming step; and
an exposure step for radiating exposure light onto the resist film formed in said resist film forming step.

16. (Original) The method for manufacturing a semiconductor device according to claim 15, wherein said anti-reflective coating forming step comprises a heating step for heating the semiconductor substrate on which the anti-reflective coating is formed.

17. (Original) The method for manufacturing a semiconductor device according to claim 16, wherein said heating step is performed at a temperature between 100°C and 250°C for 30 seconds to 60 minutes.
18. (Original) The method for manufacturing a semiconductor device according to claim 16, wherein said heating step is performed in an oxygen atmosphere.
19. (Original) The method for manufacturing a semiconductor device according to claim 16, wherein the thickness of the anti-reflective coating is made 150 nm or less in said heating step.
20. (Original) The method for manufacturing a semiconductor device according to claim 15, wherein the wavelength of the exposure light radiated in said exposure step is 254 nm or less.